

LOW TEMPERATURE AUTOIGNITION COMPOSITION

ABSTRACT

The present invention relates to a low temperature autoignition composition for safely initiating combustion of a main pyrotechnic charge in a gas generator or pyrotechnic device exposed to flame or a high temperature environment. The low temperature autoignition compositions of the invention include a mixture of an oxidizer and a powdered metal, wherein the oxidizer includes silver nitrate or a comelt or mixture comprising silver nitrate and at least one of an alkali metal nitrate, an alkaline earth metal nitrate, a complex salt nitrate, a dried, hydrated nitrate, an alkali metal chlorate, an alkali metal perchlorate, an alkaline earth metal chlorate, an alkaline earth metal perchlorate, ammonium perchlorate, sodium nitrite, potassium nitrite, silver nitrite, a complex salt nitrite, a solid organic nitrate, a solid organic nitrite, or a solid organic amine, and where the metal fuel and oxidizer are present in amounts sufficient to provide an autoignition composition having an autoignition temperature of no more than about 232°C. The present invention also relates to a method for initiating a gas generator or pyrotechnic composition in a gas generator or pyrotechnic device exposed to flame or a high temperature environment. In the method of the invention, the gas generator or pyrotechnic composition is placed in thermal contact with a low temperature autoignition composition of the invention.

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